

**Amendments to the Claims:** This listing of claims will replace all prior versions, and listings, of claims in the application

Listing of Claims:

1. (Currently Amended) A sorting and separating method for recycling plastics which are provided in a mixture of plastics as refuse, comprising the steps of: wherein the method includes separating the plastics according to types of plastic,

wherein

separating and sorting the mixture of plastics is sorted and separated according to colour into fractions separated according to colour; colours; and

separating and sorting the fractions of plastics thus obtained, separated according to colours, are sorted and separated according to types of plastic.

2. (Currently Amended) The method of as set forth in claim 1, wherein the mixture of plastics is sorted and separated according to primary colours, wherein the primary colours are preferably standardised colours, in particular RAL primary colours.

3. (Currently Amended) The method of as set forth in claim 1, wherein the fractions of plastics, separated according to colours, are subjected to extraction in an extractor having an extraction medium, wherein the extraction medium is ethyl acetate preferably a carrousel extractor, by means of ethyl acetate as the extraction medium.

4. (Currently Amended) The method of as set forth in claim 1, wherein further comprising before the step of separating and sorting the mixture of plastics by colour, the step of analyzing the mixture of plastics is subjected to an analysis for material degradation, wherein and the plastics contained in the mixture of plastics are sorted and separated according to colour if the analysis establishes that a predetermined degree of degradation has not been exceeded.

5. (Currently Amended) The method of as set forth in claim 1, wherein plastics (LDPE, PP) with different melting temperatures, which are obtained as a mixture by means of or after the step of separation according to colours, are separated thermally by means of a thermal scanner.

6. (Currently Amended) The method of as set forth in claim 5, wherein the thermal scanner includes a conveying means comprising a perforated support on which the plastics (LDPE, PP), to be thermally separated, are transported and heated to a temperature at which at least one of the plastics (LDPE, PP) is in a free-flowing and at least one other of the plastics (LDPE, PP) is in a solid state of aggregation.

7. (Currently Amended) The method of as set forth in claim 6, further comprising the step of collecting the wherein a plastic (LDPE) which has been transferred by heat to a free-flowing state of aggregation by being heated is collected in a cooling bath to be re-solidified.

8. (Currently Amended) The method of as set forth in claim 1, wherein further comprising the step of

washing the mixture of plastics, having been separated from the non-plastics contained in a mixture of material, is washed with a washing fluid;

and thereafter, feeding the washing fluid - together with washed out organic material contained in it - is fed to a bio gas power station comprising a bio gas generator which generates methane gas from the washed out fluid and the organic material by means of micro-organisms, and a gas turbine to combust the methane gas, wherein energy produced from the combustion of the methane gas is used for separating and sorting the mixture of plastics

the methane gas is combusted in a gas turbine; and

a combustion gas from the gas turbine is used to produce processing energy for sorting and separating the plastics.

9. (Currently Amended) A plant for recycling plastics and preferably also for recycling other materials contained in a mixture of refuse material containing plastics and non-plastics, said plant including comprising:

a) a first type-separating means with which plastics and non-plastics are separated;

b) a second type-separating means adapted to receive the plastics from the first type-separating means with which the plastics are sorted and separated according to colours into fractions; and

c) a third type-separating means adapted to receive the fractions of plastics from the second type-separating means with which the fractions ~~plastics separated from the non-plastics~~ are separated according to types of plastic;

wherein

e) ~~the plastics from the first type-separating means are transported to a colour separating means in which the plastics are sorted and separated according to colours and transported in fractions of colours to the second type-separating means.~~

10. (Currently Amended) The plant of as set forth in claim 9, wherein the second type-separating colour separating means comprises a carrousel extractor in which the fractions of plastics, sorted according to colours, are individually subjected to extraction using a hot extraction medium.

11. (Currently Amended) The plant of as set forth claim 9, wherein the second third type-separating means comprises a thermal scanner which comprises a conveying means with a perforated support for plastics and preferably a cooling means arranged underneath the perforated support, in a hot gas tunnel.

12. (Currently Amended) The plant of as set forth in claim 9 further comprising a bio gas power station with a bio gas generator topped by at least one gas turbine, wherein:

the bio gas generator generates methane gas, by means of micro-organisms, from the organic material removed from the refuse mixture of material, and wherein in the plant;

the methane gas is combusted in the gas turbine; and

~~a combustion gas from the gas turbine is used to produce processing energy and/or the gas turbine is used to produce electrical energy for the plant.~~

13. (Currently Amended) The plant ~~of as set forth in~~ claim 9 further comprising a chip and fibre recycling means with which re-processible chips and fibres are obtained in a multi-stage chemical-thermo-mechanical ~~chemico-thermo-mechanical~~ method from wood refuse separated out from the mixture of material in the plant.

14. (Currently Amended) The plant ~~of as set forth in~~ claim 9, wherein the plastics are subjected to an analysis for material degradation by means of an analysing means; ~~wherein the and~~

~~plastics are only sorted and separated according to colours if a material degradation of the plastics does not exceed a predetermined degree of degradation, and where they do exceed it, are preferably comminuted into plastic particles to be used as fuel.~~

15. (New) The method of claim 2, wherein the primary colours are standardized colours.

16. (New) The method of claim 15, wherein the primary colours are RAL primary colours.

17. (New) The method of claim 3, wherein the extractor is a carrousel extractor.

18. (New) The method of claim 5, wherein the types of plastics are LDPE and PP.

19. (New) The method of claim 7, wherein the plastic which has been transferred to a free-flowing state of aggregation by heat is LDPE.

20. (New) The plant of claim 11, wherein the thermal scanner further comprises a cooling means arranged underneath the perforated support.

21. (New) The plant of claim 14 wherein the plastics which do not exceed the predetermined degree of degradation are comminuted into plastic particles to be used as fuel.